

CLAIMS

1. A method of producing an SOI wafer comprising at least the steps of forming an insulator film on at least one of a bond wafer made of silicon single crystal to form an SOI layer and a base wafer made of silicon single crystal to be an support substrate, bonding each main surface of the bond wafer and the base wafer via the insulator film, and making the bond wafer bonded to the base wafer thinner, wherein one silicon wafer selected from a group consisting of an epitaxial wafer, an FZ wafer, a nitrogen doped wafer, a hydrogen annealed wafer, an intrinsic gettering wafer, a nitrogen doped and annealed wafer, and an entire N-region wafer is used as the base wafer.

2. A method of producing an SOI wafer comprising at least the steps of forming an insulator film on at least one of a bond wafer made of silicon single crystal to form an SOI layer and a base wafer made of silicon single crystal to be an support substrate, forming a micro bubble layer in the bond wafer by implanting gas ions from a main surface of the bond wafer, bonding the ion-implanted main surface of the bond wafer to a main surface of the base wafer via the insulator film, and delaminating

the bonded wafer at the micro bubble layer as a border, wherein one silicon wafer selected from a group consisting of an epitaxial wafer, an FZ wafer, a nitrogen doped wafer, a hydrogen annealed wafer, an intrinsic gettering wafer, a nitrogen doped and annealed wafer, and an entire N-region wafer is used as the base wafer.

3. The method of producing an SOI wafer according to Claim 1 or Claim 2, wherein one silicon wafer selected from a group consisting of an epitaxial wafer, an FZ wafer, a nitrogen doped wafer, a hydrogen annealed wafer, an intrinsic gettering wafer, a nitrogen doped and annealed wafer, and an entire N-region wafer is used as the bond wafer.

4. The method of producing an SOI wafer according to any one of Claims 1-3, wherein the SOI layer to be formed has a thickness of 0.3 μm or less.

5. The method of producing an SOI wafer according to any one of Claims 1-4, wherein the insulator film to be formed has a thickness of 0.4 μm or less.

6. An SOI wafer produced by the method according to any one of Claims 1-5.